

PIES TO:

WH-DuBridge

WH-Burns

SCI

EUR

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IO

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Microfilm.

THE SECRETARY OF STATE

WASHINGTON

RS/R FILES

Attention *Mr. Mullen*  
Keep this study together.

March 14, 1969

MEMORANDUM FOR THE PRESIDENT

Subject: International Space Cooperation

There is enclosed a staff study responsive to your request of February 21, 1969 that I review the January recommendations of your Task Force on Space as referred to in the report of Arthur Burns' group. In preparing the staff study we have had discussions with Dr. DuBridge.

We have examined the report of the Task Force and agree with its conclusions and recommendations concerning international cooperation in space matters.

Because of the inherent global character of most space activities and their international involvement and efforts, there is a close relationship between our space program and our foreign policy objectives. From the viewpoint of those objectives there is a clear need for an ongoing and successful American space program -- one designed to afford opportunities for expanded international cooperation in space matters. We are interested in space cooperation, not only for its intrinsic scientific merits, but also to further specific foreign policy objectives. Thus in the case of the USSR our objectives are an improvement in the political climate and new contacts with an influential segment of Soviet society. In Western Europe we seek to further intra-European multilateral cooperation in this field. In the developing countries, we view the use of space technology as an aid in development.

Our interests in international cooperation in this field will be served best, within a balanced space program which would meet other U.S. national objectives as well, by (1) projects which afford maximum opportunities for direct foreign participation and (2) projects which yield economic and social benefits

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Clearances: EUR - Mr. Hillenbrand  
(in draft)

EA/J - Mr. Finn (draft)

J/PM - Mr. Farley (draft)

IO - Mr. DePalma (informal)

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for other countries as well as ourselves. The U.S. has by now developed capabilities which would permit a major commitment to projects in which we dedicate our skills to explore further the earth and its resources, to improve communications, and to enable better understanding and use of our atmospheric and marine environment. The successful completion of our initial manned landing on the moon (hopefully this summer) will afford a special opportunity for you to make a major public statement on the international values of our ongoing space program. We are examining the possibility of a statement along these lines at that time.

A basis for future projects of this sort lies in existing cooperative arrangements such as those for space research, and the uses of satellites for meteorology and communications. We expect major new opportunities for international cooperation over the next few years to derive from: (1) expanding arrangements to use meteorological data; (2) new arrangements for other environmental studies and for earth resource surveying, including new international institutional arrangements; (3) direct broadcast via satellite of TV instructional and educational programs, particularly in developing countries; (4) experimental development of air-traffic-control/navigation satellites; (5) collaboration in lunar and planetary exploration, and (6) foreign participation in the U.S. manned flight program, including foreign scientist-astronauts as well as foreign experiments.

Our ability to take new initiatives will depend, not only on the extent to which the future U.S. space program is designed and funded to provide such opportunities, but principally on the development of foreign interests and capabilities in this field. In view of the level of capabilities and resources abroad in space activities, the cooperation developed thus far in this field has been quite remarkable both as to its depth and variety. Nonetheless, the cooperation we have sought has been beyond that which other countries have been prepared to take up.

In the case of the USSR our efforts thus far to bring the Soviets to significant working cooperation in space activities have not been successful. Nor are prospects for

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future cooperative ventures particularly good. Nevertheless, new attempts should be made at a high level and in confidence to engage the Soviets in this kind of cooperation. Our proposals should emphasize coordination of separate efforts rather than corporate efforts, i.e.: joint planning and sharing of results; not joint efforts. We must also be careful to avoid the impression that the super-powers are dividing space between them without sufficient regard for the interests of other advanced countries, particularly those allied with the U.S.

Most of the other advanced countries are now in considerable disarray as to the scope and organization of their future space programs. We cannot expect them to respond to major new U.S. initiatives until they have themselves reached decisions on these matters. New initiatives with the developing countries will depend largely on the extent to which we are prepared to provide satellite services related to their economic and social needs and on their interest in participating in international institutional arrangements for the use of space technology to meet these needs.

The enclosed staff study contains suggestions as to areas of activity for new initiatives and conditions under which such initiatives might be taken. These conditions are not static, either in terms of the international situation or the development of space capabilities. We will, therefore, continue within the Department and the Government to study urgently further possibilities for specific cooperative proposals.

  
William P. Rogers

Enclosure:

Staff study on "New Initiatives  
in Space Cooperation"

cc: Dr. Lee DuBridge  
Mr. Arthur Burns

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March 10, 1969

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NEW INITIATIVES IN SPACE COOPERATION\*

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- \* Prepared in response to the President's memorandum of February 21, 1969 to the Secretary of State requesting that the Secretary "review the recommendations on international space cooperation contained in the report from Arthur Burns' group (see Item XVIII-7 of that report)".

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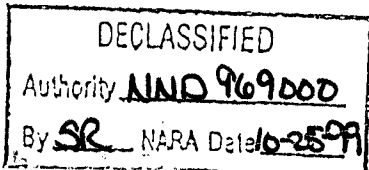
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General Observations

The report from the Arthur Burns' group (item XVIII-7) refers to the recommendations of the President's Task Force on Space under the chairmanship of Dr. Charles H. Townes. We have examined the report of the Task Force submitted on January 8 and agree with its conclusions and recommendations concerning international cooperation in space matters, e.g.:

1. That "many aspects of space work stimulate and offer new opportunities to promote world unity and cooperation" (Preamble, page 2).
2. That "space operations put in a new light many international questions and also lead naturally toward some areas of international cooperation"; that they offer opportunities for initiatives; and that we should "exploit these opportunities with both care and vigor" (Summary of Issues and Conclusions, page 6).
3. That with respect to the USSR we should remain in a competitive position on the basis of plans which reflect concurrent Soviet activity, but that our own space goals should reflect U.S. program needs rather than being a mirror of Soviet space goals. That we should seek cooperation, but without becoming dependent upon the Soviets for major areas of important scientific information (Competition with the USSR, pages 8-9).
4. That broader space cooperation with selected nations or groups of nations would be valuable, including the creation of international laboratories to analyze and interpret data of earth applications satellites and collaboration with the USSR in unmanned planetary exploration (International Cooperation, pages 22-24).



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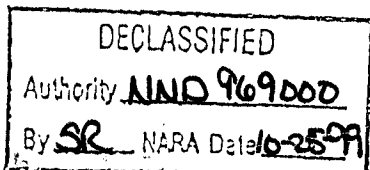
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Because of the inherent global character of most space activities and in view of their international involvement and effects, there is a close relationship between our space program and our foreign policy objectives -- in the conviction abroad that we have the capability to assure our security and will not be taken by surprise in space technology; in the world-wide application of economic and social benefits from space technology; in opportunities for international cooperation, including cooperation between ourselves and the Soviets; in unique possibilities for eventual arms verification and arms control; and in the effect of our space activities on the impression abroad of American leadership in science and technology. Thus, from the viewpoint of foreign policy objectives there is a clear need for an on-going and successful American space program. The accomplishments of the past decade have produced capabilities and opportunities which should lead to broader and more intensive cooperation over the next decade. We should take full advantage of these opportunities.

Our interests in international cooperation will be served best by (1) projects which afford maximum opportunities for direct foreign participation and (2) projects which yield economic and social benefits for other countries as well as ourselves. In this respect, manned flight will probably be less relevant than unmanned flight.

It appears that the major new opportunities for international cooperation over the next few years will derive primarily from:

1. Expanding arrangements to use meteorological data;
2. New arrangements for other environmental studies and for earth resource surveying, including new institutional arrangements through the U.N., its specialized agencies and regional organizations. These arrangements could include (a) internationally planned use of satellites in connection with programs such as the Global Atmospheric Research Program and the International Decade of



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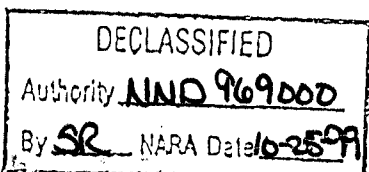
Ocean Exploration and (b) international centers or laboratories for the interpretation of satellite data and study of its application;

3. Direct broadcast via satellite of TV instructional and educational programs, particularly in developing countries.
4. Experimental development of air-traffic-control/navigation satellites;
5. Collaboration in lunar and planetary exploration;
6. Limited foreign participation in the U.S. manned-flight program (both foreign scientist-astronauts and foreign experiments).

Opportunities for fruitful new initiatives over the next few years will depend primarily on:

1. The measure of foreign interest and capabilities. Thus far, our proposals for cooperation have exceeded the willingness and ability of other countries to respond.
2. The extent to which the U.S. effort is designed and funded to provide such opportunities. Several of the most attractive opportunities for future cooperation will depend on basic decisions, yet to be made, as to the scope and direction of our own space program over the next decade. For example, whether it will be possible after the Apollo program has been completed to devote a larger percentage of NASA's effort and budget to research and applications tasks in which other countries can participate or which will yield direct economic and social benefit.

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3. The willingness of the U.S. to share technology, particularly in sensitive areas such as launch vehicles (because of their relation to strategic weapons delivery systems) and communication via satellite (because of its possible use to compete with the INTELSAT global communications satellite system). Our present policies in these respects have been a deterrent to some useful cooperation with advanced countries.

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### Cooperation with the USSR

The world of space activity is essentially bi-polar (U.S. and USSR). No other countries, individually or in combination, will approach the level of U.S. and Soviet leadership in these activities for some years to come. Thus, from the viewpoint of our foreign policy as well as our space program objectives, the Soviets are the main chance.

Our efforts thus far to bring the Soviets to significant working cooperation in space activities have not been successful. Agreements were reached in 1962 and 1965 for limited cooperation through exchange of information and coordinated experimental research in communications satellites, meteorological satellites, measurement of the earth's magnetic field and in space bio-medicine. None of these projects has been fully implemented because of Soviet inability or unwillingness to do so. Since 1965 the Soviets have not been responsive to many overtures for discussion of a broader range of cooperation. The Soviet space program remains wrapped in secrecy and directed toward essentially national purposes. There is no significant international cooperation in Soviet space activities, even with the communist countries.

We will continue to be in a competitive position vis-a-vis the Soviets while, at the same time, seeking cooperative arrangements. We cannot expect early access to Soviet space technology or launch sites or other space facilities which they consider sensitive from the viewpoint of their own national security. Yet, a prerequisite to useful cooperation will be more detailed knowledge about their program than they have been willing to make available thus far.

We doubt that the Soviets will readily undertake substantial programs of space cooperation with us in the near future. They appear to attach great importance to the propaganda value of their unilateral space exploits, continue to shy away from visible examples of cooperation with the U.S., and worry about giving away secrets. Nevertheless, we feel that we should continue to try, at a high level, to interest the Soviets in space cooperation. Such cooperation would be beneficial from a scientific standpoint and could

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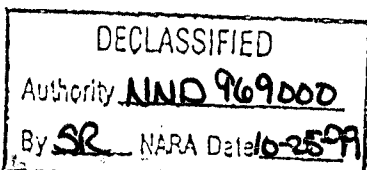
be a useful way of improving the political climate. It also would enable a more accurate evaluation of their space program.

At the outset efforts to this end should be made in confidence and without publicity. Our proposals should not include activities which, from the Soviet point of view, impinge upon their national security. Nor should they be such as to affect the Soviet competitive position adversely or make one party dependent on the other in activities of particular importance to national objectives. We should continue to emphasize collaboration through coordination of separate efforts rather than through corporate efforts, i.e.: joint planning and sharing of results; not joint efforts. Hopefully this would lead eventually to some division of labor and saving of expenditures. However, we should avoid the impression that the super-powers are dividing space between them without sufficient regard for the interests of other advanced countries, particularly those allied with the U.S.

The following possibilities for further cooperation should meet these criteria and merit further serious consideration:

1. In space research -- earth orbital investigation of atmospheric dynamics and earth's magnetic field; astronomical observations from earth satellites or lunar stations; satellite observation of solar phenomena, including maintenance of a continuing solar patrol for warning of major solar disturbances; and lunar and planetary exploration.
2. In practical applications -- coordination of a continuing network of satellites to provide data for world-wide weather prediction and early warning of natural disasters; the development of capabilities for earth resource surveying via satellites.

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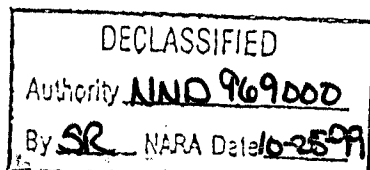
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3. In manned flight -- bio-medical research, space rescue, coordination of experiments and flight parameters for earth orbiting space stations, lunar exploration, and exchange of astronauts.
4. In tracking -- to supplement each others networks.

Although the most dramatic among these possibilities would be an exchange of astronauts and a joint capability for space rescue, the most useful and intriguing would seem to be collaboration in practical applications and in unmanned lunar and planetary exploration. In view of the heavy commitment of the Soviets to planetary exploration and the difficulties which they have encountered in this program, this latter area appears to offer unusual opportunities to complement each other's capabilities (e.g.: in experiments, tracking and communications) and to share expenses as well as results.

It should be noted that several of these possibilities lend themselves to multilateral, as well as bilateral, cooperation. In the face of general Soviet objectives and problems it may be that we can engender earlier Soviet cooperation in space programs within the context of broad international participation than through bilateral collaboration.



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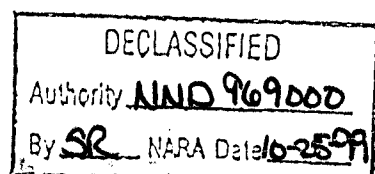
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### Cooperation with Other Advanced Countries

In Western Europe it has been our policy, with respect to space activities, to encourage broadly based multilateral programs. We believe that such programs will provide an alternative to proliferation of strictly national launch vehicle capabilities and will contribute toward European cohesion. Clearly they should be the most effective by virtue of scale and competence, and would offer the best possibilities for useful U.S. - European cooperation. However, we have not excluded bilateral cooperation which benefits U.S. interests and space activities. It would not be to our advantage in the long run to make European efforts in this field dependent upon the U.S.

The European program is as yet not clearly defined, because the Europeans have not reached agreement as to the scope and organization of their future space activities. Until they do, we cannot expect them to respond to major new initiatives for cooperation. We should, nonetheless, make new opportunities for cooperation clear to them, and work with them in their forward planning to the extent that they seek our advice.

1. Each of the countries except Portugal conducts national space activities. These vary from the French program, which has launched French satellites using their own launch vehicles, to programs in Scandinavia and the Low Countries which have been limited to sounding rocket experiments and ground-based scientific research. These programs have not represented a heavy investment -- a total of some \$300 million annually.
2. In addition the Europeans have developed two intergovernmental regional bodies -- the European Space Research Organization (ESRO) and the European Launcher Development Organization (ELDO) -- which are as yet beset with severe internal divisions as to



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purpose, structure, funding and contract-sharing. The Europeans have recently agreed to attempt to formulate a plan which would place all of their multilateral space activities, including ESRO and ELDO, in a single organization, and are making a serious effort to solve their management and funding problems.

NASA has already developed significant cooperative arrangements with all of the European national programs as well as ESRO, involving extensive joint satellite projects, sounding rocket projects, research experiments, space tracking, formal joint graduate and postdoctoral training, and highly sophisticated information exchange arrangements. NASA has already launched twelve foreign satellites and has agreements in being for half a dozen more; others are under consideration. For instance, NASA and the Federal Republic of Germany are in the final stages of defining an agreement on the largest bilateral cooperative project thus far undertaken -- a solar probe which will involve the expenditure of approximately \$60 million by Germany for two satellites and \$20 million by NASA for the supply of two launches. This project was initially proposed to the Europeans several years ago as a multilateral undertaking, but did not attract participation by other countries or by ESRO.

In addition we have made clear our willingness to cooperate further: (1) by continuing to make launch vehicles or launch services available for European satellite projects; (2) by continued support for the ESRO space research program through launch assistance -- three ESRO satellites have already been launched by NASA -- cooperative projects and technical advice; (3) through technical assistance for the ELDO launch vehicle program; and (4) by examining jointly the possibility for further cooperation in research and development on future projects.

The spectrum of possible areas for new cooperative initiatives with Europe include all the possibilities suggested above for cooperation with the USSR, except bio-medical space

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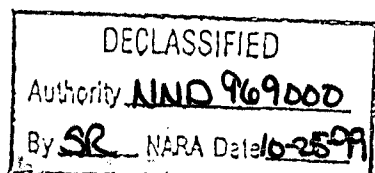
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research and space rescue. In addition, it may be possible to work with the Europeans in experimental satellite technology for navigation/air-traffic-control, in the development of a geostationary meteorological satellite to serve European regional needs, and in the development of a more advanced European launch vehicle capability. In TV communication via satellites and possibly in other telecommunications requirements the Europeans will surely wish to meet their regional needs by themselves, save for the possibility of American launch services and the acquisition of some advanced American technology.

With Japan we are now negotiating an agreement providing for cooperation by facilitating the flow of commercial technology relevant to their space program as they have projected it through the mid-1970s -- a program which includes development of a Japanese launch vehicle capability and of satellites for space research and practical applications in meteorology and communications. Like the Europeans, the Japanese have until recently been quite uncertain as to the organization and scope of their space program. The program which they have now defined will take up their efforts in this field for several years. However, in the long run the opportunities for cooperation with Japan should be similar to those with Western Europe.



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### Cooperation with Developing Countries

The possibilities for major new cooperative initiatives with the developing countries lie primarily in (1) our willingness to provide satellite services relevant to their economic and social needs and (2) their willingness to participate in international institutional arrangements to meet these needs -- in the use of space technology for environmental study and prediction, for surveying earth resources and, possibly, for the use of television via satellite for instructional and educational purposes. Adequate institutional arrangements for these purposes have yet to be established. They will require the active support of advanced countries. The developing countries cannot be expected to participate extensively in space flight programs per se. They can, however, become involved actively and usefully in developing terrestrial facilities (e.g.: community television receivers), in the analysis, interpretation and use of data derived from satellites, and in the international planning involved in using satellites in world-wide or regional atmospheric and marine programs.

NASA has already developed pilot cooperative projects with Brazil and Mexico in the aircraft phase of earth resources survey experimentation designed to prepare them for future involvement and utilization of data derived from earth resources satellites. Experiments in the use of meteorological data derived from satellites is now widespread as a result of NASA's development of the inexpensive APT system for direct receipt locally of cloud cover pictures taken by U.S. weather satellites passing overhead.

In the area of satellite telecommunications, NASA and Indian space officials are currently considering an experimental program to explore possibilities for major advances in educational and social development through instructional television. Using the capabilities of one of NASA's Advanced Technology Satellites to broadcast to small village receivers in several thousand rural communities, India hopes to demonstrate the feasibility of reaching broad areas of its population with instructional material directed to such crucial and fundamental problems as population control and ways to increase agricultural production.

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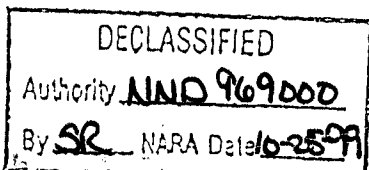
In addition it should be possible and reasonable to expand the cooperation already underway with several developing countries in sounding rocket programs and in the design of foreign experiments to be flown in U.S. satellites, both unmanned and manned. Opportunities for scientist-astronauts from these countries to participate in manned flights would seem marginal.

#### A Proposal

The accomplishments of the past decade have produced capabilities in space science and technology which would enable the U.S. to make a major commitment to projects which serve directly the economic and social needs of all countries. Such a commitment need not, and should not, be the single or overriding objective of our ongoing space program. In view of its international values it should, however, be a major objective. When the Apollo program has been completed it should be possible to undertake such a commitment within a balanced ongoing space program which would meet other U.S. national objectives as well.

In commenting upon the imminent achievement of our goal to land men on the moon and to explore it, Dr. Walter O. Roberts, President of the University Corporation for Atmospheric Research, has put it as follows:

"When this moment of success comes, our nation will have an unparalleled opportunity to take a bold step in another direction in space. Richard M. Nixon can place his stamp of identity on an equally inspiring objective. He can call upon our nation and the world to exploit man's presence in space and his new-found



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skills in space for the benefit of earth and its peoples. He can call for commitment of the principal thrust of our future space efforts to research and engineering programs designed to explore the earth; to improve the communications links among continents; to study the earth's resources of oil, minerals, forest, and water; to plot the changing, global patterns of the oceans and the air, so that we may better understand, predict, and conserve our atmospheric and oceanic environment.

"In making such a commitment, President Nixon will have still another challenging opportunity. By aiming the skills of space toward earth-oriented and peaceful uses, not only can he serve the tangible interests of people in every corner of the globe but he can call for the attainment of this goal through a world-cooperative research and engineering effort in which nations in many stages of development can participate. By this step he will greatly advance international understanding. Everyone will benefit if the Soviets, Americans, and others conduct peaceful space research in concert, with joint planning and joint execution. It is a rare chance for initiative."\*

We are examining the possibility of a Presidential statement along these lines, possibly upon the successful completion of our first manned lunar landing. That event will afford a special opportunity for a major public statement on the international values of our ongoing space program.

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\* "The Next Objective in Space, Science, Vol. 163, No. 3867, February 7, 1969.

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